



MILATARI NEWSLETTER

Volume 2 Number 11

October 1983

Price \$1.00

** NEXT MEETING **

SATURDAY, October 15th — 2PM

ARMBRUSTER SCHOOL — GREENDALE



The ATARI 1400XL Home Computer offers all the features of the ATARI 800XL Home Computer—plus a built-in direct-connect modem and a voice synthesizer. The modem enables users to link up with data bases and information networks via telephone, to access the latest news, stock market quotes, computer data banks, and electronic shopping centers. The voice synthesizer can be programmed to change text to speech, or to develop and link phonemes. The expansion connection provides the potential for adding sophisticated peripherals. While the ATARI 1400XL Home Computer offers all these state-of-the-art features, it also offers a HELP key, four special function keys, and one-touch cursor controls that work with selected programs, for even more convenience.

o MEMORY: 64K RAM

24K ROM (operating system plus ATARI BASIC programming language)

o KEYBOARD: Full-stroke design. 66 keys, including HELP key and 4 programmable keys with 12 pre-programmed functions. International character set. 29 graphics keys.

o CPU: 6502C microprocessor. Clock speed of 1.79 MHz

o SPECIAL ATARI INTEGRATED CIRCUITS: GTIA (graphic display). POKEY (sound generator and controller ports). ANTIC (controls screen and input/output).

o PROGRAMMING FEATURES: Built-in ATARI BASIC programming language. HELP key (provides additional information and menu screens). Software compatibility (works with programs designed for all ATARI Home Computers).

o DISPLAY: 11 graphics modes. 256 colors (128 colors displayable at one time). Maximum 320 x 192 resolution in graphics modes. 5 text modes. Maximum text display is 40 columns x 24 lines.

o SOUND: 4 independent sound voices. 3 1/2 octave range.

o INPUT/OUTPUT: Software cartridge slot. Expansion connection (external processor bus for memory expansion and adding future peripherals). TV output. Monitor output. 2 controller ports. Serial I/O connector.

o SPEECH SYNTHESIZER: Translates text to speech with unlimited vocabulary. Can be programmed directly to use phonemes.

o TELECOMMUNICATIONS: Built-in direct-connect modem. 300 baud transmission rate.

(features and specifications subject to change)

Milwaukee Area ATARI Users Group

This newsletter is written and printed by members of the Milwaukee Area ATARI Users Group (MILATARI), an association of individuals with a common interest in using and programming ATARI computers. MILATARI is not affiliated with the ATARI company, nor any other commercial organizations.

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Write MILATARI Newsletter at P.O. Box 1191, Waukesha, WI 53187.

MEMBERSHIP INFORMATION

Membership is open to individuals and families who are interested in using and programming ATARI computers. The membership includes the subscription to this newsletter and access to the user's library. The membership fee is \$15 per year for individual, \$20 for family and \$10 for associate. Contact Larry Leskovsek, Treas. at 547-0249 or write MILATARI, P.O. Box 1191, Waukesha, WI 53187 for more information.

MEETING INFORMATION

MILATARI meetings are held once monthly. This month the meeting will be held at the Armbruster School, 7000 Greenway, Greendale, WI. The meeting is held in the multi-purpose room. BASIC classes begin at 2:00 P.M. Technical sessions are also held at 2:00 P.M. The business session begins at 3:00 P.M. followed by demonstrations. The library will be open before and after the business meeting.

MILATARI Officers:

President	Gary Nolan 353-9716
Vice-president	Chris Stieber 529-2663
Treasurer	Larry Leskovsek 547-0249
Secretary	Jim Comaris 353-3447
Education	Linda Scott 466-2314
Chairperson	Ron Friedel 354-1717
Cassette	Dennis J. Bogie 968-9341
Librarian	Sharon Gamache 421-2887
Membership	Steve Booth 367-8739
Committee	Karl Buschhaus 774-2576
Disk	David Frazer 542-7242
Librarian	Pete Kurth
Publications	
Librarian	
Newsletter	
Editor	
Bulletin Board	
SYSOP	

Technical support Group:

The following members have indicated a willingness to assist MILATARI members.

William Lawrence	1-968-3082 Programming
Don Wilcox	228-1650 Programming
Erik Hanson	252-3146 Prog/Tech
Gary Nolan	353-9716 Prog/Tech
Steve Booth	367-8739 Programming
Nick Liberski	782-5594 Prog/Tech

MILATARI Bullentin Board:

The MILATARI Users Group maintains a 24 hr bulletin board service. The phone number is 355-6031.

President's RAM

by Gary Nolan

WELL, WHERE IS IT?

Everybody's lookin' for somethin'. Disk drives (that work), computers, software, BASIC upgrades. Everything.

Somebody in town has a RANA drive, really. I don't recall where he got it, but they are around. Maybe there are or will be more, you can never tell. The TRAX drives will be shipped to some local dealers the week of Oct. 10th. These sound very interesting with the built in printer port and printer buffer and Turbo software that will make it run lots faster than any other drive (kinda, sorta, maybe). And if everything works out, we could have one at the meeting. After all, we did have a 1050 at the last meeting. Another new Atari compatible drive is called the INDUS GT. It's features include something called "CommandPost AccuTouch" function switches (ala RANA & TRAX?). It also comes with three "DrivingSystems" programs, and the "GT PortaCase" disk storage case. Someone saw an ASTRA drive, but it didn't work all that well. Well at least we got to see a 1050 Atari drive at the last meeting.

The 600XL's have been delayed until Oct 1st, pending FCC approval, with the 800XL to follow shortly thereafter. And for you people with a little more money to spend, no word on the release of the 1400 or 1450 or even the 1600/1800 (whatever). Haven't seen an ADAM, Spectravideo or Laser either. But Spectravideo did hold a press conference to intro the higher priced version. Only trouble was that none of the computers worked. HOW EMBARRASSING! I mean REALLY, is this any way to treat James Bond??

LJK released Spell Perfect and you Letter Perfect owners should have gotten your \$5 off coupon in the mail. Retail price is \$80.

The Atari Writer disk driver software has been released. I've seen the program but did not run it. (I'm a Letter Perfect man) If it's not in town you can order it from APX.

And the Atari software for the Koala Pad is out. I've played with the pad and the Micro Illustrator program which is similar to some the other graphics programs around like Paint, Graphics Master and the like. There is another graphics pad for the Atari called The PowerPad. There's a big difference in size between the two. The Koala is 4"x4" while the PP is 12"x12".

For those of you who missed the last meeting but want to know the latest on the Basic upgrade here 'tis. I don't know, neither does Atari. Or at least they haven't called back to give me the latest non-committal news.

HEY! WHERE'D THEY COME FROM

Some new stores in town with an Atari connection.

The Soft House is at 61st and Coldspring in Greenfield and as the name implies is a software only store. You might stop and check them out on the way to the next meeting. I'd like to thank them for finding me a coathanger when I locked myself out of my car. Welllll, not really my car but my wife's and it's got this funny lock and the sun was in my eyes. (I'm sooo embarrassed)

Next is Dick's Place (that's the name). It's located 4 or 5 blocks north of Capitol on 124th St.. Just look for the trailer with the sign on it (I'm NOT kidding). After all this you might be suprised with the store itself. It is a well laid out place. One of the better looking sales floors around.

(continued on next page)

President's RAM (con't)

They are running some opening specials on Flip'N'File 25's at \$15 ea.. Amdek B&W monitors and Morrow printers are also on sale. When you stop by ask for Nick, he might look familiar. Books and magazines are 10% off.

IF IT WON'T FIT, STUFF IT

(In the mailbox that is)

I get some good, bad, strange, interesting and or informative things in the mail.

Informative: A new magazine for Atari computers & the VCS owners called Hi-Res is due out soon. Special subscription rates of \$20 a year are being offered to user group members. In addition they will send the user group \$2 for every subscription when ordered en masse. So if you would like to get a new mag and help the group at the same time see me on the 15th and have cash, check, money order or your Visa/MC number handy.

Strange: One of the stranger things to get stuffed into my mailbox was something called The Stick Station. It's a 3 or 4 lb. block of wood measuring 18"x6.5"x2". Dead center is a square cut-out with a hole drilled out the back of that. What you do is, run the joystick cable thru the hole and fit the stick into the cut-out and play away. It'll be there next meeting if you want to check it out.

Interesting: From Valley Soft comes an index of Atari software drawn from four mags and the Eugene Users Group newsletter. It covers the period of April '81 to June '83. Cost is \$6 ea. or \$5 for two or more.

Order from:

Valley Soft

2660 SW DeArmond

Corvallis, OR 97333

For more info see me at the meeting.

Good: After reading my review of the Austin Franklin 80 Col. board in the Aug N/L Mr. Austin Franklin himself called. To say he wasn't pleased with is putting it mildly. After some discussion we agreed that I would do another review. That review is in this newsletter. So if you were not at the last meeting you missed a chance to see RGB from an Atari. Impressive.

THANKS Y' ALL

Thank you's are in store for several people. Here tis:

A real big thanks to Austin Franklin for his donation of a complete 80 col., RGB set up. And to go along with that, thanks to Joe Kasper for talking Ernests Venta of Micro Age into letting us use a Quadcolor RGB monitor for the demo. (See Joe, he TRUSTS you)

Thanks to Jim Luty of Badger Software for letting me play with a 1050 for a week and demo it at the last meeting. This month he's letting me try out a koala Pad. So next month I'll review that.

The efforts of Dan merkel and Erik Hanson at the workshop session was much appreciated.

And thanks to Mr. Levine for the very interesting talk on computer ethics and legalities.

WORK—WORK—WORK

This months workshop will cover software. We'll try to cover as many types and names of as much as possible, with a short demo or two thrown in.

(Continued on page 12)

Dr. Leonard Levine speaks on Computer Crime

Dr. Leonard Levine, professor of computer science at the University of Wisconsin-Milwaukee, gave a presentation on Wisconsin law and computer crime at MILATARI's September meeting.

Dr. Levine discussed the Wisconsin law pertaining to computer law. He indicated that Wisconsin currently has a very strong law on ethics and computers. (A reprint of the Wisconsin law can be found at the end of this review) One of the strong points of the Wisconsin law, according to Dr. Levine, is its definition of software and data. He stated that Wisconsin is the only state which has a law on it's books which defines 'data' as property.

By definition in the State of Wisconsin, it is a felony to steal software or destroy or alter data which is not your property.

After a review of the computer law, the meeting opened up for a discussion period. Two topics dominated most of the discussion period. 1) The Milwaukee 414 gang and 2) Copywrite protection. In both areas the feelings of the speaker and audience supported the fact that intrusion into other peoples domain (i.e. entering someone's computer and looking at and/or altering information) was both illegal under current state and federal laws and is an immoral act.

We would like to thank Dr. Levine for taking time to share with us on this timely issue.

**** Computer Law-State of Wisconsin ****

STATE OF WISCONSIN
1981 Assembly Bill 744-April 30, 1982

Chapter 293, Laws of 1981

An act to create 943.70 of the statutes to crime in respect to computers and providing penalties.

The people of the State of Wisconsin, represented in senate and assembly as follows:

SECTION 1, 943.70 of the statutes is created to read:

943.70 Computer crimes.

(1) DEFINITION. In this section:

(a) "Computer" means an electronic devices that performs logical, arithmetic and memory functions by manipulating electronic impluses, and includes all input, output, processing, storage, computer software and communication facilities that are connected or related to a computer in a computer sysytem or computer network.

(b) "Computer network" means the interconnection of communication lines with a computer through remote terminals or a complex consisting of 2 or more interconnected computers.

(c) "Computer program" means an ordered set of instructions or statements that, when executed by a computer, causes the computer to process data.

(d) "Computer software" means a set of computer programs, procedures or associated documentation used in the operation of a computer system.

(dm) "Computer supplies" means punchcards, paper tape, magnetic tape, disk packs, diskettes and computer output, including paper and microfilm.

(e) "Computer system" means a set of related computer equipment, hardware or software.

(continued on next page)

Computer Law - State of Wisconsin (con't)

(f) "Data" means a representation of information, knowledge, facts, concepts or instructions that has been prepared or is being prepared in a formalized manner and has been processed, is being processed or is intended to be processed in a computer system or computer network. Data may be in any form including computer printouts, magnetic storage media, punched cards and as stored in the memory of the computer. Data are property.

(g) "Financial instrument" includes any check, draft, warrant, money order, note, certificate of deposit, letter of credit, bill of exchange, credit or credit card, transaction authorization mechanism, marketable security and any computer representation of them.

(h) "Property" means anything of value, including but not limited to financial instruments, information, electronically produced data, computer software and computer programs.

(i) "Supporting documentation" means all documentation used in the computer system in the construction, clarification, implementation, use or modification of the software or data.

(2) OFFENSES AGAINST COMPUTER DATA AND PROGRAMS.

(a) Whoever wilfully, knowing and without authorization does any of the following may be penalized as provided in par. (b):

1. Modifies data, computer programs or supporting documentation.
2. Destroys data, computer programs or supporting documentation.
3. Accesses data, computer programs or supporting documentation.
4. Takes possession of data, computer programs or supporting documentation.
5. Copies data, computer programs or supporting documentation.

(b) Whoever violates this subsection is guilty of:

1. A Class A misdemeanor unless subd. 2 or 3 applies.
2. A Class E felony if the offense is committed to defraud or to obtain property.
3. A Class D felony if the damage is greater than \$2,500 or if it causes an interruption or impairment of governmental operations or public communication, of transportation or of a supply of water, gas or other public service.

(3) OFFENSES AGAINST COMPUTERS, COMPUTER EQUIPMENT OR SUPPLIES.

(a) Whoever willingly, knowingly and without authorization does any of the following may be penalized as provided in par. (b):

1. Modifies computer equipment or supplies that are used or intended to be used in a computer, computer system or computer network.
2. Destroys, uses, takes or damages a computer, computer system, computer, network or equipment or supplies used or intended to be used in a computer, computer system, or computer network.

(b) Whoever violates this subsection is guilty of:

1. A Class A misdemeanor unless sub. 2 or 3 applies.
2. A Class E felony if the offense is committed to defraud or obtain property.
3. A Class D felony if the damages to the computer, computer system, computer network, equipment or supplies is greater than \$2,500.

*Section 990.05, 1979 WISCONSIN STATUTES: Laws and acts time of going into force. "Every law or act which does not expressly prescribe the time when it takes effect shall take effect on the day after its publication."

ADVANCED GRAPHICS

Examples and discussions of Player-Missile Graphics
and features of Graphics Mode 8

Items 1 to 3 appeared in the last issue

- 1) Moving a Player
- 2) Setting Priority
- 3) Collision Detection

- 4) Using Missiles
- 5) String-Player
- 6) Color Artifacts
- 7) Text in mode 8
- 8) VBLANK Player Move

Information provided by:

ATARI INC.
CONSUMER PRODUCT SERVICE
PRODUCT SUPPORT GROUP

DEMOPAC #5

PLAYER-MISSILE GRAPHICS Using-Missiles JB 5/82

All of the missiles start at the same offset from PMBASE. The offset is +768 for single-line, and +384 for double-line resolution. The missile area extends to the start of player 0, at +1024 or +512. It is the same length as a player area, 255 bytes in single-line resolution, 127 bytes in double-line resolution.

The missiles are very much like a fifth player. The difference is that the missile area is controllable two bits at a time. The horizontal position register for missile 0 controls the horizontal position of the lowest two bits of the missile area. Missile 0 gets its color from player 0.

To turn on a missile, you must enable Player-Missile Graphics and define the start of the missile area at the correct offset from PMBASE. Select a location on the screen by adjusting the offset from the missile starting address. Once you have figured out this location, turn on the missile by poking in data. The data you put there controls which missile is turned on.

The data for a missile is the number which turns on the associated bits. For example, the lower two bits are missile 0. To turn on missile 0, you need the binary number 0000 0011. This is a decimal 3. If you POKE MISSILESTART+OFFSET, 3 missile 0 appears on the screen. If you want both missile 0 and missile 3, you need the binary number 1100 0011. This is decimal 195 (3+192). To turn on both of these missiles in the same vertical position, POKE MISSILESTART+OFFSET, 195.

The bits are associated with the missiles as follows:

```
0000 0000:all missiles off(0)
0000 0011:missile 0 on(3)
0000 1100:missile 1 on(12)
0011 0000:missile 2 on(48)
1100 0000:missile 3 on(192)
1111 1111:all missiles on(255)
```

Like players, the vertical position of a missile is changed by changing the offset from the starting address. Zero the missile bits at the old offset, to erase the previous image, and poke the data at the new offset. Remember to erase only the missile that moves. You cannot just POKE in a zero, you must zero the bits that belong to that missile.

The size of a missile can be set in the size register, 53260. Missiles, like players, can be single, double or quadruple width. For double size, turn on the lower, or right-hand bit of the appropriate missile. For quadruple size, turn on both bits.

The following program turns on three missiles. All three are different colors. Two of them move vertically up the screen, at different horizontal positions. The third is quadruple size, and moves horizontally across the screen.

To get a feeling for missiles, you can try putting in the fourth missile, or changing the various parameters in this simple program, such as size, horizontal position, color, or direction of movement.

(continued on next page)

DEMOPAC #5 (con't)

```

1 REM MISSILES
2 REM JB 5/82
3 REM demonstrate the use of missiles in player-missile graphics
4 REM *****
10 M0=3:M1=12:M2=48:REM data for each missile
20 GOSUB 1000:REM set up p/m graphics
30 POKE SIZEM,M2:REM missile 2 is quadruple size
40 H=50:POKE HPOSM2,H:REM horizontal position of missile 2
50 POKE MSTART+50,M2:POKE 706,88:REM color and initial position, m2
60 POKE HPOSM0,120:POKE 704,62:REM color and horizontal position, m0
70 POKE HPOSM1,120:POKE 705,191:REM color and horizontal position, m1
80 FOR I=127 TO 1 STEP -1:REM move up from bottom of screen
90 POKE MSTART+I,M0+M1:POKE MSTART+I+1,0:REM poke in new image, erase old
100 IF I=50 THEN POKE MSTART+I,M0+M1+M2:REM when the paths cross
110 IF I<50 THEN POKE MSTART+50,M2:REM keep m3 turned on
120 H=H+1:POKE HPOSM2,H:REM move m3 horizontally
130 NEXT I:REM until m0 and m1 go off the screen
140 H=H+1:IF H<250 THEN POKE HPOSM2,H:GOTO 140:REM move m3 rest of way
150 PRINT "THERE THEY WENT...":END
999 REM *****
1000 GRAPHICS 3:SETCOLOR 2,0,0
1005 PRINT "HERE THEY COME..."
1010 POKE 559,46:POKE 53277,3:REM enable p/m graphics, double-line
resolution
1020 I=PEEK(106)-16:POKE 54279,I:REM set up pmbase
1030 MSTART=I*256+384:REM start of missile data area
1040 SIZEM=53260:REM size register for missiles
1050 HPOSM0=53252:HPOSM1=53253:HPOSM2=53254:REM horizontal positions
1060 FOR I=0 TO 127:POKE MSTART+I,0:NEXT I:REM clear missiles
1070 RETURN

```

```

1 Rem : STRING-PLAYER
2 Rem : EZ/JB 11/81
4 Rem : make BASIC think the player/missile area is a string:
5 Rem : player movement is then accomplished by string-assignment
9 REM *****
100 DIM P$(1),D$(22)
108 REM player/string of control characters
109 REM contains spaces on ends to erase previous image
110 D$=" <<<$$$<<< ":REM put 4 control-character hearts where spaces are
111 REM to define your own control string,use line 110 gosub 1000 instead.
119 REM assign location of variable value table,and string-array area
120 VTAB=PEEK(134)+256*PEEK(135)
130 ATAB=PEEK(140)+256*PEEK(141)
200 GRAPHICS 8
210 POKE 559,62:REM set resolution
230 POKE 704,88:REM set color
240 PMBASE=PEEK(106)-8:REM step back from RAMTOP
250 POKE 54279,PMBASE:REM to set PMBASE
260 POKE 53277,3:REM enable players
270 POKE 53256,3:REM at quadruple size
340 X=110:POKE 53248,X:REM set horizontal position
500 OFFSET=256*PMBASE+1024-ATAB:REM figure offset to player 0
510 V3=INT(OFFSET/256):REM hi-byte
520 V2=OFFSET-256*V3:REM lo-byte
530 POKE VTAB+2,V2:REM displacement of player (string) from STARP
540 POKE VTAB+3,V3:REM hi-byte
550 POKE VTAB+4,20:REM string length (266 bytes)
560 POKE VTAB+5,1:REM hi-byte
570 POKE VTAB+6,20:REM dimension length (266 bytes)
580 POKE VTAB+7,1:REM hi-byte
590 Y=110:P$(Y,Y+21)=D$:REM initialize string-player in middle of screen
600 FOR EVER=0 TO 0 STEP 0:REM check stick
610 IF STRIG(0)=0 THEN 800:REM use trigger to exit
620 SVAL=STICK(0):IF SVAL=15 THEN 690
641 IF SVAL>4 AND SVAL<8 THEN X=X+1
642 IF SVAL>8 AND SVAL<12 THEN X=X-1
644 IF SVAL=5 OR SVAL=9 OR SVAL=13 THEN Y=Y+2
647 IF SVAL=6 OR SVAL=10 OR SVAL=14 THEN Y=Y-2
670 POKE 53248,X:P$(Y,Y+21)=D$:REM set horizontal and vertical position
690 NEXT EVER

```

(continued on next page)

DEMOPAC #5 (con't)

```

800 POKE 53248,1:REM horizontal position off screen for exit
810 POKE 53277,0:REM disable Player/Missile DMA
899 REM *****
900 REM the following subroutine can be used to define
910 REM the string of control characters which contains the player shape.
1000 D$="":REM put 2 control-character hearts where spaces are
1005 ? "300 TO STOP"
1010 ? "BIT PATTERN #":INPUT N
1020 IF N=300 THEN 1050
1030 D$(LEN(D$)+1)=CHR$(N)
1040 GOTO 1010
1050 D$(LEN(D$)+1)="":REM put 2 control-character hearts where spaces are
1060 RETURN

```

COLOR ARTIFACTS

Extra Colors in Mode 8

JB 2/82

Mode 8 is the highest resolution graphics mode available. The individual pixels are very small, half a color clock wide. Only one color register is available, although any of the 16 hues can be put into that register. The foreground is a bright luminance of that hue, and the background uses a low luminance.

A color clock is the smallest unit of horizontal measurement in which all of the colors can be displayed. Since each mode 8 pixel is only half a color clock wide, you cannot get every color in every pixel. If you hit one side of the color clock, you get one color, and if you hit the other side, you get the other color. The foreground color which shows up is a combination of the two artifacts, which actually appear in individual pixels.

Artifacts can sometime work for you. If you wish to separate the colors, simply turn on only even or odd pixels. Since the resolution is so fine, the resulting color areas still appear solid. In this way you can get 4 colors at a time in a 2-color mode, without resorting to machine language subroutines. The 4 colors are the two artifacts, the foreground (a combination of the artifacts), and the background.

The following program demonstrates artifact colors by drawing a bar of even-numbered pixels, a bar of odd-numbered pixels, and a solid bar, with both even and odd pixels. The program then cycles through the 16 colors, with the highest luminance in the foreground register and the lowest luminance in the background. You will notice that the artifact colors are not the same as the usual 16 colors. With the GTIA chip, both the usual colors and the artifact colors are slightly different than with CTIA.

```

1 REM EZ ARTIFACTS
2 REM EZ/JB 2/82
3 REM *****
10 GRAPHICS 8:POKE 752,1:REM disable cursor
20 SETCOLOR 1,0,14:REM brightest luminance for foreground
30 SETCOLOR 2,0,0:REM lowest luminance for background
40 COLOR 1:REM select foreground register
50 REM *** draw horizontal bar, using only odd-numbered pixels ***
55 FOR I=1 TO 319 STEP 2:PLOT I,0:DRAWTO I,40:NEXT I
60 REM *** draw horizontal bar, using only even-numbered pixels ***
65 FOR I=0 TO 318 STEP 2:PLOT I,41:DRAWTO I,80:NEXT I
70 REM *** draw horizontal bar, using all pixels ***
75 FOR I=0 TO 319:PLOT I,81:DRAWTO I,120:NEXT I
80 REM *****
90 REM *** cycle through colors to observe all artifact combinations ***
100 FOR C=0 TO 15
110 SETCOLOR 1,C,14:SETCOLOR 2,C,0
120 PRINT "C=";C
130 FOR WAIT=0 TO 400:NEXT WAIT
140 NEXT C
150 GOTO 100

```

```

1 REM CHARACTER IN MODE 8
2 REM ME/JB/82
3 REM put mode 0 characters on a mode 8 hi-res graphic screen
4 REM -- the program converts each ATASCII character to internal code,
5 REM finds that character in the ROM character set, and pokes the data
6 REM for that character directly into the screen data area in RAM.
7 REM -- note that this is only possible with mode 0 characters and mode 8
8 REM graphics, because the pixel size happens to be the same.
9 REM *****

```

(continued on next page)

DEMOFAC #5 (con't)

```

10 DIM STRING$(5),X$(1)
20 STRING$="ATARI"
30 X=15:Y=80:REM some test coordinates (alters placement on screen)
40 GRAPHICS 8
50 SCREEN=PEEK(88)+256*PEEK(89):REM starting address of screen RAM
60 LOC=SCREEN+Y*40+X:REM location on screen (offset from starting adr)
70 FOR CHAR=1 TO LEN(STRING$):REM for each character in string
80 X$=STRING$(CHAR,CHAR):REM individual character
90 X=ASC(X$):REM get ATASCII code
100 IF X>127 THEN X=X-128:REM turn off inverse video
110 IF X>31 AND X<96 THEN X=X-32
120 IF X<32 THEN X=X+64:REM turn ATASCII into internal display code
130 CHARLOC=57344+X*8:REM location of character in ROM character set
140 FOR BYTE=0 TO 7:REM character data is 8 bytes long
150 POKE LOC+BYTE*40,PEEK(CHARLOC+BYTE):REM get from ROM,put on screen
160 NEXT BYTE:REM next byte of character
165 REM note that each byte is below the previous one (1 line-length
apart)
170 LOC=LOC+1:REM next character is one space to the right
180 NEXT CHAR:REM get the next character in the string
185 REM *****
190 REM ** the following routine draws an ATARI logo with mode 8 graphics
200 N=0:COLOR 1:FOR X=100 TO 150
210 IF X<132 THEN PLOT 120,X:DRAWTO 130,X
211 IF X>=132 THEN N=N+1:PLOT 120-N,X:DRAWTO 130-N,X
215 PLOT 135,X:DRAWTO 145,X
220 IF X<132 THEN PLOT 150,X:DRAWTO 160,X
221 IF X>=132 THEN PLOT 150+N,X:DRAWTO 160+N,X
230 NEXT X

1 REM VBLANK PLAYER
2 REM LW/JB 8/82
3 REM a machine language routine to move a player during vertical blank
4 REM *****
10 REM *****
11 REM ***** set up vblank routine on page 6 (listing follows) *****
12 REM *****
20 FOR I=1536 TO 1656
30 READ X:POKE I,X:NEXT I
40 REM the following numbers are the decimal equivalents of the hex object
41 REM code in the machine language program on the next page.
50 DATA 173,120,2,41,1,208,3,32,43,6,173,120,2,41,2,208,3,32,67,6,173,120
51 DATA 2,41,4,208,3,32,91,6,173,120,2,41,8,208,3,32,106,6,76,98,228,160
52 DATA 8,174,240,6,202,224,33,144,13,142,240,6,189,0,60,157,255,59,232,136
53 DATA 16,246,96,160,8,174,240,6,232,224,218,176,245,142,240,6,189,5,60
54 DATA 157,6,60,202,136,16,246,96,174,241,6,202,224,48,144,223,142,241,6
55 DATA 142,0,208,96,174,241,6,232,224,201,176,208,142,241,6,142,0,208,96
60 REM *****
61 REM ***** name locations *****
62 REM *****
70 SDMCTL=559:FMBASE=54279:GRCTL=53277:NMIEN=54286:VVBLKD=548
80 COLPO=704:HPOSP0=53248
100 REM *****
101 REM ***** set up player *****
102 REM *****
110 POKE SDMCTL,62:REM .single-line resolution
120 POKE FMBASE,14*1024/256:REM .set up player data on page 14 (hi-byte)
130 POKE GRCTL,3:REM .enable players
140 POKE COLPO,88:POKE HPOSP0,100:REM . set color and initial horizontal
pos.
150 PSTART=15*1024:REM . starting address of player 0
160 FOR I=0 TO 7:REM . create 8-line player shape
170 READ X:POKE PSTART+100+I,X
180 NEXT I
190 DATA 255,126,60,24,24,60,126,255
200 REM *****
201 REM ***** set up vertical blank vector *****
202 REM *****
205 POKE 1776,101:POKE 1777,100:REM . init hpos and vpos in VBLANK routine
210 POKE NMIEN,0:REM . disable DMA
220 POKE VVBLKD,0:POKE VVBLKD+1,6:REM . point vector to page 6 routine
230 POKE NMIEN,64:REM . reenale DMA (P/M, standard playfield)
240 END:REM . VBLANK routine is now in place,
250 REM . and functions regardless of BASIC prg.

```


ATARI Macro Assembler Ver 1.0A Page 1

D2:PMOVE.SRC

```

PLAYER          * PMOVE: A VBLANK ROUTINE TO READ JOYSTICKS AND MOVE
                *
                * DEFINITIONS
    = 0278      STICK0 = $0278
    = D000      HPOSP0 = $D000
    = 3C00      P0START = $3C00
    = 06F0      VPOS = $6F0
    = 06F1      HPOS = $6F1
    = E462      XITVBV = $E462
0000 = 0600      ORG $600
                *
                * READ JOYSTICK
                *
0600 AD7802      LDA STICK0
0603 2901        AND #1 ;CHECK FIRST BIT
0605 D003 ^060A  BNE S1 ;BIT SET MEANS NO
0607 202B06      JSR UP ;IF CLEAR, MOVE UP
060A AD7802      LDA STICK0
060D 2902        AND #2 ;CHECK NEXT BIT
060F D003 ^0614  BNE S2
0611 204306      JSR DOWN ;IF CLEAR, MOVE DOWN
0614 AD7802      LDA STICK0
0617 2904        AND #4 ;CHECK NEXT BIT
0619 D003 ^061E  BNE S3
061B 205B06      JSR LEFT ;IF CLEAR, MOVE LEFT
061E AD7802      LDA STICK0
0621 2908        AND #8 ;CHECK LAST BIT
0623 D003 ^0628  BNE EXIT
0625 206A06      JSR RIGHT ;IF CLEAR, MOVE RIGHT
0628 4C62E4      EXIT JMP XITVBV ;THAT'S ALL
                *
                * MOVE ROUTINES
                *
                * MOVE UP
    UP          LDY #8 ;INIT LINE COUNTER
062B A00B        LDX VPOS ;GET TEMP VERTICAL POSITION
062D AEF006      DEX ;MOVE UP ONE
0630 CA          CPX #33 ;TOO HIGH?
0631 E021        BCC RETURN ;YES, FORGET IT
0633 900D ^0642  STX VPOS
0635 8EF006      LDA P0START,X ; MOVE IMAGE UP
0638 BD003C      STA P0START-1,X
063B 9DFF3B      INX
063E E8          DEY ; DO NINE LINES
063F 88          BPL ULOOP
0640 10F6 ^0638  ULOOP
0642 60          RETURN RTS
                *
                * MOVE DOWN
    DOWN        LDY #8 ; INIT LINE COUNTER
0643 A00B        LDX VPOS
0645 AEF006      DEX ;MOVE DOWN ONE
0648 E8          CPX #218 ;TOO LOW?
0649 E0DA        BCS RETURN ; YES, FORGET IT
064B B0F5 ^0642  STX VPOS
064D BEF006      LDA P0START+5,X ; MOVE IMAGE DOWN
0650 BD053C      STA P0START+6,X
0653 9D063C      DEX
0656 CA          DEY ;DO NINE LINES
0657 88          BPL DNLOOP
0658 10F6 ^0650  DNLOOP
065A 60          RETURN RTS
                *
                * MOVE LEFT
    LEFT        LDX HPOS ;GET TEMP HORIZONTAL POSITION
065B AEF106      DEX
065E CA          CPX #48 ;TOO FAR?
065F E030        BCC RETURN ;YES, FORGET IT
0661 90DF ^0642  STX HPOS
0663 BEF106

```



```
0666 8E00D0      STX HPOSP0
0669 60          RTS
```

```
*
* MOVE RIGHT
*
```

```
066A AEF106      RIGHT LDX HPOS
066D E8          INX
066E E0C9        CPX #201 ;TOO FAR?
0670 B0D0 ^0642  BCS RETURN ;YES, FORGET IT
0672 8EF106      STX HPOS
0675 8E00D0      STX HPOSP0
0678 60          RTS
```

no ERRORS, 17 Labels, \$4A0E free.

President's RAM (con't from page 4)

This will be non-game software. If anyone has a particular program they've been working with, and would like to share your knowledge, call me and we'll get you on the program. Five, ten minutes at most and you'll be done. The November session will cover system upgrades and maintenance. Call now, to help then.

AH, EXCUSE ME BUT!

This could be called catchin' em by suprise, or patience pays off. A company called AlpeX has held a patent entitled "TV Display Control Apparatus", which covers bit mapping technology, for some time now. Well they recently sent letters to hardware and software cartridge manufacturers informing them of possible patent infringement. Now they say that the base rate is \$400,000 for a non exclusive license. That's the sum paid by the first respondent, some company call Atari in Sunnyvale. Talks are being held with Mattel and Coleco.

Along those lines comes the report that Bizcomp is claiming that a pantent granted to them in June will allow them to charge other modem makers for the use of intelligent modem design technologies. The patent entitled "Modem Control Device Code Multiplexing", covers the method that most programmable modems use to switch between command and data states. Hayes has already signed an agreement.

You see, the trick is to wait until they tie themselves into your technique then sneak up behind them, tap 'em on the shoulder and say "Ah, excuse me, but....."

FOOD FOR THOUGHT

With our membership getting spread out in the Milwaukee and Waukesha area, some people are finding it difficult to make the meetings. It has been proposed that we look at several alternatives for meetings. One suggestion was to form a Waukesha chapter that could meet out there. Another was to hold two meetings a month at different sites and times. We need some feedback from you. Think about it and at the November meeting or in the N/L we could take a survey to get your feelings. You do realize that meeting at the present site is cleaning out the treasury, like right now! The donations have helped, but it hasn't helped enough. If you haven't been donating, please start. Thanks to those who have.

THE END

Yes, I'm going to shut up. (For a while)
See you on the 15th.....

IT DIDN'T DO THAT LAST TIME

by Gary Nolan

(OR: What can I say, after I say I'm sorry)

As promised here's the re-review of the Austin Franklin 80 Column Colour Video Processor for the Atari 800.

The basic set-up consists of the video board for memory slot #3 and a cartridge for the right hand slot. The cartridge gives you 80 col. capability and can be used with Basic, but not with a 16K cart..

With this combination you get an 80 col. x 25 line screen with a 7x9 char size. Also supported are character blink, reverse video, half intensity and underlining. System will run 30% faster. All screen output is at >20K baud. And that screen will have to be a monitor capable of supporting 80 col.. You'll need 49K of ram to run this, either a 32K/16K combination or the Austin Franklin 48K board with loop back. The video board has a light pen plug that will work any pen used with joystick port #4.

For programmers the only real difference you'll notice is that a logical line is now 79 characters long. The 80th char. has to be the [RETURN], or the computer will not accept that line. There is a 78th char auto beep that can be turned on or off if you like, which is a help to people like me who look at the keyboard and not the screen. The one feature that did not work as well with my monitor was the half intensity. A/F uses the composite video signal output to the monitor. I've found that the USI, NEC and others get a better picture using the composite luminance signal.

Included with the system is a terminal program that is pretty good. It supports Xmodem file transfer and allows you to set up data exchange in a Atari/Atari, Atari/ASCII, ASCII/Atari format or to emulate a DEC V100 terminal. You can adjust the program to fit almost any communication need.

The optional RGBI adapter board gives you the added ability to use an RGB monitor. This gives you 80 col. capability and color on one monitor. You also get a much sharper picture with better color definition. It puts out a standard IBM RGBI positive signal but can be adapted to give a negative sync signal. This board comes with a cartridge for the left slot that allows you to communicate with an ATR8000 over the serial buss at 19.2K baud. It fully supports all CP/M and Wordstar controls.

How does it compare with the BIT3 board? Well, it runs faster, has more features and does have color available. But outside of the communications program that comes with it, and T.H.E. I don't know of any other software that will run in 80 col. That doesn't mean that there isn't any out there that it will work with, it just that I haven't heard about it. Mr. Franklin told me that the Synapse people were developing software for this system and a word processor was being written that would be sent to all registered owners. Right now the BIT3 has two programs written for it, Letter Perfect and Data Perfect. I had problems running some programs that were of the autorun type. But when the file name was changed there was no trouble. BE WARNED. Some software just will not run with this unit installed. But then, this is true of other add-ons also. You win some, lose some and some are just flat canceled!

Is it worth the money? That depends on your needs and programming abilities. Without a large supporting software base some people can't use the best computer made. But the better your programming skills the more useful this system becomes. As for the RGBI option, weell. If you have access to an RGB monitor, fine and dandy. If not, it could prove to be an awful expensive addition. I never bought the BIT3 because of the cost and useable program base. And I'm a Letter Perfect fan. But a lot of other people did buy it, and could justify the added cost. So it still comes down to your needs. It is a good piece of equipment, well made, with many useful features. When all is said and done, YOU have to decide whether or not this is for you.

October Meeting Agenda

1:00 PM Officers meeting

2:00 PM BASIC Class - 3rd session

(The BASIC class also meets the 1st Tuesday of each month at Armbruster School. Thursday class begins at 8:00 PM Call Linda Scott 466-2314 for more information)

2:00 PM WORKSHOP - Overview of practical application software

2:00 PM KIDS KORNER opens

2:30 PM TECHNICAL SESSION - Online demonstration on how to download and upload files to the bulletin board by Pete Kurth. (Pete is our BBS SYSOP)

3:30 PM BUSINESS MEETING

4:30 PM DEMONSTRATIONS:

Business - Education - Games

OTHER AREA EVENTS

October 9 - Annual Ham, Computer and Video Fest - Waukesha County Expo

Start at 8:00 AM - Admission \$2.00 advance, \$3.00 at the door

Reserve 4 foot table for \$3.00

Write KMRA ARC - P.O. Box 411, Waukesha, WI 53187

October 12 & 13 - Micro Montage - University of Wisconsin - Milwaukee

Call (414)963-5925 for more information

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